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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,075	02/11/2004	Kensaku Shinozaki	042100	3422

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EXAMINER	
VAN, LUAN V	

ART UNIT	PAPER NUMBER
1795	

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03/30/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,075	SHINOZAKI, KENSAKU	
	Examiner	Art Unit	
	LUAN V. VAN	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,10,12 and 13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 10, 12 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment of 02/05/09 does not render the application allowable. Claims 1-3, 10 and 12-13 are pending in the application.

Status of Objections and Rejections

The rejection of claim 1 under second paragraph of 35 U.S.C. 112 is withdrawn.

All other rejections from the previous office action are maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 10, and 12-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the limitation of "not roughening treated" is deemed to be new matter, because it is not supported in the specification. In fact, the specification on page 7, lines 24-25, states that the untreated foil is further roughening treated. Even assuming that "not roughening treating" is a species of the genus “untreating,” the

disclosure of a genus does not support all species of the genus.

Regarding claim 13, the instant claim recites the untreated copper foil does not have deposited modules. However, no support is found in the specification for this limitation. The paragraphs of page 7, line 21 -- page 8, line 1 and page 4, lines 2-8, pointed out by the applicant in the argument do not support the limitation of claim 13. Therefore, this limitation is deemed to be new matter.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolski et al. '140 in view of Fatcheric et al.

Regarding claim 1, Wolski et al. '140 teach an electrodeposited copper foil comprising: a matte side surface having a surface roughness of 3.3 μm (on the matte side, see comparative example 1 in Table 2) wherein the copper foil is an untreated copper foil (see title of Table 2). Since the copper foil of Wolski et al. '140 is untreated and is formed by the same method as that of the instant invention, i.e. electroplating, one having ordinary skill in the art would have expected that the copper foil of Wolski et al. '140 would have the same intermittently spaced knob-like projections as those of the instant claim.

Furthermore, the limitation "the copper foil is an untreated copper foil" is a process limitation, and thus is not given patentability weight, since the copper foil is

distinguished by the surface roughness characteristic and not by whether it has been treated or untreated. As described above, according to MPEP 2113, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

The difference between the reference to Wolski et al. '140 and the instant claims is that the reference does not explicitly teach forming an additional nickel, zinc, cobalt layer or alloy thereof and a chromate layer.

Fatcheric et al. teach an electrodeposited copper foil, wherein said electroforming bath is an acidic electroforming bath containing nickel, cobalt, zinc or arsenic for depositing the respective metal or alloys thereof (column 5 lines 7-17). Additionally, Fatcheric et al. teach an electrodeposited copper foil wherein said rough surface is further formed with a copper plating layer and at least one layer of nickel plating, zinc plating, cobalt plating, plating of an alloy of the same (column 5 lines 13-20) and a chromate treatment layer (column 5 lines 21-23) on that, or further formed with a coupling agent treatment layer (column 5 lines 21-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the foil of Wolski et al. '140 by depositing a zinc layer of Fatcheric et al., because the zinc layer provides a barrier layer between the

copper foil and the laminating resin substrate in order to prevent laminate staining which occurs when ingredients of the resin chemically react with copper (column 4 lines 50-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have further modified the foil of Wolski et al. '140 by depositing a chromate layer of Fatcheric et al., because it would provide a protective layer for the underlying barrier layers (column 5 lines 21-22).

Regarding claim 2, Wolski et al. '140 teach an electrodeposited copper foil comprising: a matte side surface having a surface roughness of 3.3 μm (on the matte side, see comparative example 1 in Table 2) wherein the copper foil is an untreated copper foil (see title of Table 2). Since the copper foil of Wolski et al. '140 is untreated and is formed by the same method as that of the instant invention, i.e. electroplating, one having ordinary skill in the art would have expected that the copper foil of Wolski et al. '140 would have the same intermittently spaced knob-like projections as those of the instant claim. The limitation of further roughening treating the copper foil is a process limitation and is not given patentability weight.

Regarding claim 3, Fatcheric et al. teach that an acidic copper plating bath but suggest that other alloys as well as metals such as nickel and cobalt can be used (column 5 lines 10-17). Furthermore, since the instant claim is directed to product, the electroforming bath used to make the product is not given patentability weight because it does not further structurally limit the product.

Regarding claim 10, Fatcheric et al. teach a coupling agent treatment layer (column 5 lines 21-24).

Regarding claim 12, Wolski et al. '140 teach 3-mercapto propane sulfonate (column 4 line 67) and hydroxylethyl cellulose (Table 1). Furthermore, since the instant claim is directed to a product, the plating composition used to make the product is not given patentability weight because it does not further structurally limit the product.

Regarding claim 13, the instant claim is directed to an untreated copper foil that does not have deposited nodules. However, since the claim does not further structurally limit the product, Wolski et al. '140 read on the instant claim. Alternatively, since Wolski et al. '140 teach that the copper nodules are deposited to enhance the bonding strength of the foil with an insulating substrate (column 3 lines 18-22), it would have been obvious to one having ordinary skill in the art to have omitted the copper nodules if enhanced bonding strength of the copper foil is not desired.

Response to Arguments

Applicant's arguments filed have been fully considered but they are not persuasive. In the arguments presented on page 6 of the amendment, the applicant argues that support for claim 13 is provided in paragraphs of page 7, line 21 -- page 8, line 1 and page 4, lines 2-8. The examiner respectfully disagrees. These paragraphs do not say anything about whether the surface of the copper foil has or had copper nodules on it. Therefore, the new matter rejection is maintained. The applicant provided document D to show an untreated surface does not have deposited copper nodules. The examiner notes that it appears that the only difference between the

treated and untreated surface in document D is that the treated surface has smaller nodules, while the untreated surface has larger nodules.

The applicant further argues that Wolski et al. '140 does not teach a copper foil having a surface with intermittently spaced knob-like projections. The examiner respectfully disagrees. As stated above, since the copper foil of Wolski et al. '140 is untreated and is formed by the same method as that of the instant invention, i.e. electroplating, one having ordinary skill in the art would have expected that the copper foil of Wolski et al. '140 would have the same intermittently spaced knob-like projections as those of the instant claim.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUAN V. VAN whose telephone number is (571)272-8521. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nam X Nguyen/
Supervisory Patent Examiner, Art Unit 1753

LVV
March 24, 2009